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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,146	03/05/2002	Chikaho Ikeda	112116	5449

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
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2828

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/090,146

Applicant(s)

IKEDA, CHIKAHO

Examiner

Delma R. Flores Ruiz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 28, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30 and 31 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5, 8 - 13, and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date: 10/04/2006.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

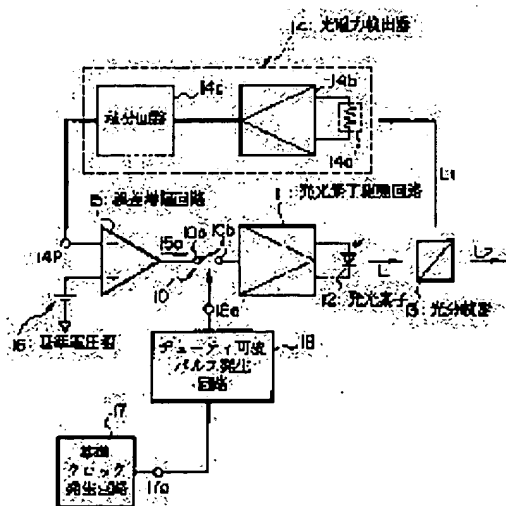
DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ema Nobuaki et al. (JP 08-077510).

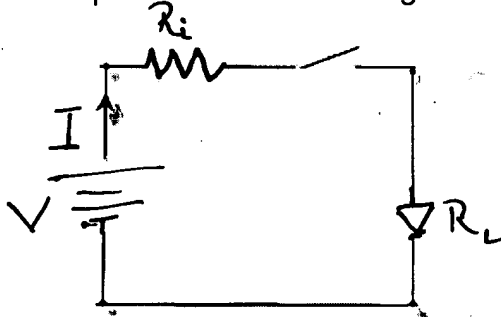


Regarding claim 1, Nobuaki discloses in Figure 1 an apparatus for driving a light emitting element in response to input data, the light emitting element emitting light by

causing a direct current to flow thereto, the apparatus comprising: a voltage driving section (see Fig. 1, Character 16); and switching section (see Fig. 1, Character 10) disposed between the voltage source (see Fig. 1, Character 16) and the light emitting element (see Fig. 1, Character 12) and controlled on a basis of the input data, wherein, when the switching section (see Fig. 1, Character 10) connects the voltage source (see Fig. 1, Character 16) to the light emitting element (see Fig. 1, Character 12).

Nobuaki discloses the claimed invention except for a resistance value from an output end of the voltage source to a drive end of the light-emitting element is smaller than an internal resistance value of the internal resistor of the light emitting element. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the resistance value from an output of the voltage must be as small possible, to the resistance value of the internal resistor, to obtain a greater effectiveness on the light emitting element.

e.g. The Voltage on $R_L = V - IR_i$. The $R_L \approx V$, therefore the R_i must be as smaller as possible to obtain a higher efficiency.



Regarding claim 4, Nobuaki disclose the switching section (see Fig. 1, Character 10) changes an output voltage of the voltage source (see Fig. 1, Character 16) and a biasing voltage to bias the light-emitting element (see Fig. 1, Character 12) on a basis of the input data.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ema Nobuaki et al. (JP 08-077510) in view of Kikuchi (6,510,168)

Regarding claim 6, Nobuaki disclose in Figure 1 an apparatus for driving a light emitting element in response to input data, comprising: a first voltage source (see Fig. 1, Character 16) for causing the laser element to be a forward biasing state and generating a first voltage (see Fig. 1, Character 16) that is lower than a threshold voltage of laser oscillation; a switching section (see Fig. 1, Character 10) for changing between the voltage on a basis of the input and applying the changed voltage directly to a drive end so the laser element (see Fig. 12 Character 12), wherein, when the switching section (see Fig. 1, Character 10) connects the voltage source (see Fig. 1, Character 16) to the light emitting element (see Fig. 1, Character 12).

Nobuaki discloses the claimed invention except for a resistance value from an output end of the voltage source to a drive end of the light-emitting element is smaller than an internal resistance value of the internal resistor of the light emitting element.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the resistance value from an output of the voltage must be as small possible, to the resistance value of the internal resistor, to obtain a greater effectiveness on the light emitting element.

Nobuaki discloses the claimed invention except for second voltage source. However, it is well know in the art to apply the second voltage source as discloses by Kikuchi in Column 3, Lines 4 – 9. Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know second voltage source as suggested by Kikuchi to the laser of 1, because it will could be use to controlling the drive current see Column 3, Lines 4 – 9 of Kikuchi.

Regarding claim 7, Kikuchi discloses the laser element is a surface emitting laser element (Column 3, Lines 25 – 26).

Allowable Subject Matter

Claims 2, 3, 5, 8 – 13, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 30 and 31 are allowed.

The following is an examiner's statement of reasons for allowance: Claim 30 recites a system for driving light emitting elements structure including the specific structure limitation of *a error amplifying section for comparing voltage corresponding to the detection result of the detecting section and a reference voltage to amplify the error therebetween; wherein the switching section changes between an output voltage of the voltage source and basing voltage, to bias the light emitting element on a basis of the input; and wherein each of the plurality of apparatus for driving light emitting elements drives the light emitting element on a basis of outputs of the error amplifying section,* which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim 30 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1 – 13, 28 and 30 – 31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system; contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



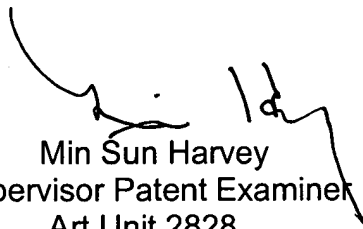
Delma R. Flores Ruiz

Examiner

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DRFR/MH

February 16, 2007



Min Sun Harvey

Supervisor Patent Examiner

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